

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In re Application of:

Lawrence M. Ausubel

Serial No.: 09/476,877

Filed: January 3, 2000

For: Computer Implemented Methods
and Apparatus for Auctions



Art Unit: 2164

Examiner: Poinvil, F.

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APPEAL BRIEF

Commissioner for Patents
Washington, D.C. 20231

Sir:

This is Appellant's Brief on appeal from the Primary Examiner's final rejection of claims 53-54, 57, 60, 61, 64-67, 71-75, 78-79, 81-86.

I. Real Party in Interest

The real party in interest in this application is the inventor, Lawrence Ausubel.

II. Related Appeals and Interferences

There are no other appeals or interferences known to Appellant or Appellant's legal representative which will directly affect or be directly affected by or have a bearing on the Board's Decision in this Appeal.

III. Status of Claims

Claims 53-86 are pending. Claims 53-54, 57, 60, 61, 64-67, 71-75, 78-79 and 81-86 have been finally rejected. Claims 55-56, 58-59, 62-63, 68-70, 76-77 and 80 have been objected to;

the final rejection indicates that these claims "would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims."

Claims 1-52 have been cancelled. A copy of the claims 53-86 is provided in the attached appendix.

IV. Status of Amendments

No amendments to the claims were filed after the final rejection.

V. Summary of Invention

The present invention relates to improving auctions and more particularly implementing an enhanced auction through the use of a plurality of intelligent, i.e., CPU based, systems. These systems include a user system for each the bidders and an auctioneer's system. The auctioneer's system is capable of determining or deciding, based on information provided from the user systems, whether the auction should continue or not. When the auctioneer's system determines that the auction should continue, at least one message is generated and communicated to a user system carrying that information. On the other hand, if a decision is reached to terminate, or not to continue the auction, then a final message is generated and sent to at least one user system.

An auction which can be implemented in accordance with the invention is that for multiple dissimilar objects. This type of auction is more difficult to implement than auctions for similar objects in that, because the objects are dissimilar, and hence must be treated individually, significantly more information is required than in an auction for similar objects. An example, described in the application of an auction for multiple dissimilar objects, is an auction for broadcast licenses. Licenses are a type of object that is inherently dissimilar. In other words, different licenses cover different territory, broadcast channels, or both

Figure 1 shows a block diagram of a plurality of user (or bidder) systems interconnected with an auctioneer's system 10 via a communication system 50.

As shown in Figures 2 and 3A, bid information may be communicated from the user system to the auctioneer system, (13/25-14/6)*.

Figure 3A shows a general outline of a flow diagram which allows for bidding in several rounds where the auctioneer's system determines whether the most recent round of bidding should result in termination of the auction or not.

Figures 8 and 9 are flow diagrams for two different embodiments of the invention. Each figure identifies different bidding formats. In figure 8 the bid format provides for identifying a set of objects (such as set S_i) and a price for the corresponding set (P_i). The bid format shown in figure 9 differs from the format of figure 8 in that one of the bid parameters Q_i is a vector which includes a scaler (that is, a number) for each different type of object. The number reveals the quantity of that type of object which is included in the bid.

The step in figures 8 and 9 (802 and 822, respectively) in which the bid format is identified, is a step of determining the maximum bid revenue obtained from the universe of bids which are then outstanding. The data used in this determination is also used, in the event that it is later determined the auction shall terminate before the submission of new bids, to identify the allocation of objects to bidders.

Figures 8 and 9 also show that another step in the flow (step 803 in figure 8 and step 823 in figure 9) is the machine determination of whether or not the auction shall continue. The specification describes several different criteria that can be used in this determination.

In summary, figures 8 and 9 show an automated, or machine implemented method, for firstly, determining whether the auction should continue or not, as recited in claims 53 and 60, and also for allocating objects to bidders in the event the auction terminates, as recited in claims 67, 74, 81 and 84.

* The reference is to the specification, page 13, line 25 to page 14, line 6.

VI. The Reference

The ON-SALE publication generally describes the ON-SALE retail service which is available through the World Wide Web. The reference generally describes that customers can shop ON-SALE's "inventory of limited quantity goods such as sports and rock-an-roll memorabilia, computers and electronics, last-minute vacation packages, special wine collections, tickets to events and vintage watches." The publication distinguishes the ON-SALE service from other on-line retail services in that "ON-SALE makes shopping on the Internet fun by adding real-time action to its sales model in the form of auctions and mark-downs." The most detailed information about the construction and operation of the ON-SALE service is described in the following paragraph on page 2 of the reference:

"Initially, ON-SALE's merchandise will be sold using one of three interactive formats: standard auctions, dutch auctions and mark-downs. In a standard auction, an item is placed on sale for a fixed time period and sold to the highest bidder. Dutch auctions occur when a number of identical items are offered for sale at the same time. The highest bidders purchase the available inventory at the lowest successful bidder's price. ON-SALE's markdown merchandise decreases in price in time intervals. Customers can buy mark-down items at the current posted price, or can wait until the next time interval, which may be hours or days, when the offering price goes down."

The publication makes it clear that the users interact with the ON-SALE service through use of their own computers. However, the reference is silent on the construction and detail implementation of the ON-SALE service.

In particular, whether or not the ON-SALE service is automated or mechanized is not described.

Whether or not the ON-SALE service includes "decision means" to determine whether to terminate an auction in response to "bid information" is not described. Whether the ON-SALE service operates with a step of "determining" whether to terminate an auction in response to "bid information" is not described.

Whether the ON-SALE service includes a step of "determining" the licenses, or other derivative rights to be assigned to bidders, is not described.

Whether the ON-SALE service includes "means for determining" the television licenses or associated derivative rights to be assigned to bidders is not described.

Whether the ON-SALE service is capable of implementing an auction in which multiple or sets of dissimilar objects are auctioned, simultaneously, is not described.

VII. The Issue on Appeal

All of the rejected claims were rejected under 35 USC §103 with respect to the sole reference relied on, the ON-SALE publication. Thus the issue presented is whether the ON-SALE publication renders the subject matter of the rejected claims unpatentable under 35 U.S.C. §103.

VIII. Grouping of Claims

The rejected claims include three independent apparatus claims, 53, 67, and 81, and three independent method claims, 60, 74 and 84.

Appellant will discuss the patentability of the rejected claims in the following groups.

The first group of claims that will be discussed is the independent claims 53 and 60 and the dependent claims 57 and 64.

A second group of claims to be discussed is the independent claims 67, 74, 81 and 84 and their dependent claims 71, 78, 82 and 85.

A third group of claims to be discussed is the dependent claims 54, 61, 65, 68, 75, 83 and 86.

Finally, the patentability of claim 66 will be addressed.

IX The Rejection

In the first Office Action, claims were rejected under 35 U.S.C. §103 based on the ON-SALE publication. The rejection was predicated on the argument that “The only difference between the ON-SALE system (sic – and the claimed invention) is that the auction as claimed is to television licenses and/or associated derivative rights.” See page 3, lines 10-13 of the Office Action of June 8, 2000.

The rejection is explained in more detail, also on page 3 of the first action as follows:

“As per claim 53, ON-SALE discloses an auction system comprising an auctioneer system coupling to at least two remote user systems. The user system is a general purpose computer comprising means for receiving messages from the auctioneer’s system and for displaying messages; means for receiving bid related information from users; means for transmitting bid information to the auctioneer’s system. See the entire document.

The auctioneer’s system including means for generating and transmitting messages to user systems, means for receiving bid information from user systems and decision means responsive to bid information for determining whether an auction should continue or terminate. The decision means including means for initiating a non-final message to continue the auction and a final message to terminate the auction. See the entire document. The only difference between the ON-SALE system is that the auction as claimed is to television licenses and/or associated derivative rights. These kinds of data do not affect the functionality of the system of ON-SALE as these are merely different types of data that cannot be accorded patentable differences. These are different intended types of ‘items’, ‘things’ or ‘objects’ that would have been obvious to the skilled artisan when gleaning from the ON-SALE system.”

The Final rejection adopted the foregoing statement of rejection; see page 2 of the Action of April 12, 2001. The rejected claims are considered “unpatentable over ON-SALE publication as stated in the prior Office Action.”

X. ARGUMENT

With respect to claims 53, 57, 60 and 64

Claim 53 is directed at a computer implemented auction system for television licenses or associated derivative rights. The claim specifies that the system includes two types of

components, “an auctioneer’s system and at least two user systems”. The claim also specifies that the auctioneer’s system is “communicatively coupled” to user systems. User systems include “means for receiving messages from the auctioneer’s system”, and “means for receiving bid related information from users” as well as “means for transmitting bid information to the auctioneer’s system”. The auctioneer’s system is specified to include “ means for generating and transmitting messages to user systems” where the messages include “a non-final message” as well as “a final message indicating that an auction is terminated”, and “means for receiving bid information from user systems”. Finally, the claim specifies that the auctioneer’s system includes “decision means responsive to the bid information...for determining whether an auction should continue or terminate”.

Claim 60 is directed at a “method for conducting a computer implemented auction of television licenses or associated derivative rights” and specifies five steps including “providing an auctioneer’s system”, “transmitting bid information to the auctioneer’s system” and “determining at the auctioneer’s system, in response to the bid information received from users, whether the auction should continue or terminate”. The steps also include “transmitting a message” indicating that the auction should continue in response to a determination to continue the auction and “transmitting a message” indicating that the auction would terminate in response to a determination to terminate the auction.

In the original statement of rejection the Examiner asserted that the reference described an auctioneer’s system including “decision means responsive to the bid information for determining whether an auction should continue or terminate”. In the responsive amendment (November 8, 2000) Appellant asserted that the reference had been reviewed with care but that Appellants were unable to identify “any disclosure or suggestion of the claimed decision means or step of determining”. In response to this argument, the Final rejection (see pages 2 and 3) did not identify the contents of the reference asserted to have been present in the first Office Action, rather the Final rejection stated:

“In response, in most auction systems, bids on an item are usually set for a predetermined duration or time and a winner may be declared based on time or based on the highest placed bid. Likewise, the ON-SALE publication clearly teaches that in a standard auction, items are placed for a fixed period of time and sold to the highest bidder. An

auction ends or continues depending on the lowest successful bidder's price. See page 2, 5th paragraph of the article."

As best the Appellant can determine, the Final rejection refers to the following text:

" Initially, ON-SALE's merchandise would be sold using one of three interactive formats: standard auctions, dutch auctions and markdowns. In a standard auction, an item is placed on sale for a fixed time and sold to the highest bidder. Dutch auctions occur when a number of identical items are offered for sale at the same time. The highest bidders purchase the available inventory at the lowest successful bidder's price. ON-SALE's markdown merchandise decreases in price in time intervals. Customers can buy markdown items at the current posted price, or can wait until the next time interval, which may be hours or days, when the offering price goes down."

Appellant submits that there is no disclosure in this paragraph, or anywhere else in the reference, that identifies the presence of a "decision means" such as is recited in claim 53, or describes a step of "determining...in response to the bid information received from users, whether the auction should continue or terminate". Both the "decision means" and the "determining" step recite responsiveness to the "bid information". The relevant paragraph of the reference refers to "standard auctions", "dutch auctions" and "markdowns". With respect to the "standard" auction the paragraph describes that an object is on sale for a "fixed time". This is inconsistent with the claim recitations that the operation of the "decision means" or the "determining" step (both of which regulate the duration of an auction by determining the point at which the auction terminates) both respond to bid information. With respect to the "dutch auction" the paragraph has no indication that the auction has any particular duration and as a consequence there is "no decision means" or step of "determining" the duration of an auction. While there evidently is a duration to the markdown, it does not appear to be an auction and there is no indication that the duration has any relation to any of the bids (or that there even are bids) so even if there were any "decision means" or "determining" there is no responsiveness to "bid information". Clearly the reference does not disclose the claimed subject matter.

The only discussion in the Final rejection which might serve to bridge the gap between the subject matter of the rejected claims 53 and 60, and the subject matter actually disclosed in the reference, is the citation of *In re Bozek*, 162 USPQ 545 (CCPA 1969) and an allegation of "common knowledge" and/or "common sense". Appellant asserts that neither *Bozek* nor the reference to common knowledge or common sense justifies the rejection.

Bozek deals with the question of considering, together, the teachings of two different references. In this case, however, there is only a single reference so that *Bozek* is inapt.

The Court of Appeals for the Federal Circuit in, *In re Zurko* (August 2, 2001 CA #96-1258) dealt with an allegation that “basic knowledge” or “common sense” can be used to bridge the gap between what is actually found in a reference and the subject matter of a rejected claim. A copy of the *Zurko* opinion is attached. In dismissing those allegations the Court stated:

“We cannot accept these findings by the Board. This assessment of basic knowledge or common sense was not based on any evidence in the record, and therefore, lacked substantial evidence support. As an administrative tribunal, the Board clearly has expertise in the subject matter over which it exercises jurisdiction. This expertise may provide sufficient support for conclusions as to peripheral issues. With respect to core factual findings in a determination of patentability, however, the Board simply cannot reach conclusions based on its own understanding or experience – or on its assessment of what would be basic knowledge or common sense.”

Here, too, the allegation of “common knowledge” or “common sense” is not based on any evidence in the record. Appellant submits that the rejection of claims 53 and 60 is supported neither by the prior art nor the arguments of record and, therefore, should be reversed.

Claims 57 and 64 depend respectively on claims 53 and 60 and recite, in addition, that the auction is conducted in multiple rounds. There is nothing in either reference relied on or in the final rejection which is directed at the multiple round subject matter. Appellant submits that claims 57 and 64 are patentable over the reference for this additional reason.

As to claims 67, 71, 74, 78, 81, 82, 84 and 85

Claim 67 is directed at a system “for conducting a computer implemented auction of television licenses or associated derivative rights” and which includes plural user systems operated by bidders and an auctioneer’s system. As specified in the claim the auctioneer’s system is “communicatively coupled” to plural user systems. Claim 81 is directed at a computer system for implementing an auction of television licenses or associated derivative rights which includes plural bidders.

Claim 67 identifies “means for receiving bid information” at plural of the user systems and “means for transmitting signals based on the bid information from the user systems to the auctioneer’s system”. Claim 67 also calls for “means for determining, based on the signals, the television licenses or associated derivative rights to be assigned to the bidders”. Claim 81 specifies “means for inputting, into the computer, bids for television licenses or associated derivative rights” and “means for determining, based on the bids, an allocation of television licenses or associated derivative rights to bidders”.

Thus claims 67 and 81 have in common the “means for determining” based on signals or bids “the television licenses or associated derivative rights to be assigned” to bidders.

Appellant’s specification describes in detail (see figures 8 and 9 and the associated specification) both the format of the bid and the manner in which a determination is made to assign television licenses or associated derivative rights to the bidders.

Claims 67 and 81 are apparatus claims, and the means for determining is construed in accordance with the 6th paragraph of §112. The claims themselves make it clear that the system is either a “computer implemented auction” or is itself a “computer system”. The means for determining is supported by the disclosure of figure 8 and/or figure 9. There is nothing in the reference which describes, discloses or even hints at a computer implemented system or a computer system with a mean for determining as is recited in claims 67 and 81. Clearly the reference does not disclose the claimed subject matter. The rejection is based on §103. However, there is no discussion in the final rejection of any reasoning which would serve to bridge the gap between the subject matter of claims 67 and 81 (“means for determining”) and the subject matter of the reference. The Office Action does rely on *In re Bozek*, 162 USPQ 545 (CCPA 1969), and “common knowledge and common sense”. Neither provides the support to justify the rejection.

In re Bozek deals with the question of considering, together, the teachings of two different references. In this case there is only one reference and thus, *Bozek* is inapt.

The Court of Appeals for the Federal Circuit, in *In re Zurko* (August 2, 2001, CA #96-1258) also dealt with an allegation that “basic knowledge” or “common sense” can be used to bridge the gap between what is actually found in a reference and the subject matter of a rejected claim. In dismissing those allegations in *Zurko*, the Court stated:

“We cannot accept these finding by the Board. This assessment of basic knowledge or common sense was not based on any evidence in the record, and, therefore, lacked substantial evidence support. As an administrative tribunal, the Board clearly has expertise in the subject matter over which it exercises jurisdiction. This expertise may provide sufficient support for conclusions as to peripheral issues. With respect to core factual findings in a determination of patentability, however, the Board simply cannot reach conclusions based on its own understanding or experience – or on its assessment of what would be basic knowledge or common sense.”

To the extent that this kind of reasoning is foreclosed to the Board, it is also foreclosed to the Examiner.

Appellant submits that claims 67 and 81, in defining a computer system or computer implemented auction system which includes “means for determining” clearly and patentably defines over the sole reference of record.

Claims 74 and 84 are directed to a computer implemented method (74) and a method for using a computer to implement an auction (84). Both methods include a determining step for determining the television licenses or associated derivative rights to be assigned to the bidders or an allocation of television licenses or associated derivative rights to bidders.

There is no disclosure in the reference of either a “computer implemented” auction, the use of a computer to implement an auction or a step of determining the licenses or other derivative rights to be assigned to bidders. When appellant's response challenged the rejection on the grounds that the reference had no disclosure of a computer implemented step the only response was the reference to *Bozek* and “common knowledge” or “common sense”. Both the reference and the reasoning of the rejection simply do not take account of these substantive distinctions. While the reference mentions “standard auctions”, “dutch auctions” and “markdowns” there is no suggestion or hint that any of the “standard auctions”, “dutch auctions” and “markdowns which are disclosed involve a computer implemented auction or a step of

determining the licenses or other derivative rights to be assigned to bidders” by computer. For all that appears in the reference, whatever determining that might take place could be based on human judgment. Appellant submits that neither basis supports the rejection for the reasons described above in connection with claims 67 and 81.

Appellant submits that, for foregoing reasons, the rejection of claims 67, 74, 81 and 84 be reversed.

Claims 71, 78, 82 and 85 depend respectively from claim 67, 74, 81 and 84 and recite, that the auction is conducted in multiple rounds. There is nothing in either the reference relied on or in the final rejection to reach this subject matter. Appellant submits that claims 71, 78, 82 and 85 patentably distinguish from the reference for this reason in addition to the reasons given with respect to their respective patent claims 67, 74, 81 and 84.

As to claims 54, 61, 65, 75, 83 and 86

Each of these claims depends on one of the independent claims and specifies the form of the bid information, e.g., that the bid information includes a value parameter P_i and an associated license subset identification S_i .

Each of these claims has also been rejected with respect to the sole reference of record, although similar claim 68 has been allowed.

In the Office Action the final rejection is justified on the basis that the reference “teaches that a user must submit bid information such as a price (payment) in relationship with the item being auctioned.” However, each of these claims specifies more than the identification of a price. Each of the claims specifies that one element of the bid is an “associated license subset identification S_i ” which “identifies a set of licenses”. Appellant submits that the subject matter being auctioned distinguishes from the reference in two respects, both in the character of the goods, licenses, and the fact that the bid allows for identification of a “subset”, e.g., more than a single element. There is no indication in the reference of either an auction of television licenses or an auction of any kind in which plural dissimilar items are auctioned. Television licenses are dissimilar, see page 23, line 21 of the specification. The difference between an auction of single

items as opposed to an auction which is capable of auctioning multiple dissimilar items is clearly described in the specification. The specification notes that some of the embodiments described in the application “emphasized the additional aspects of the inventive system rendering it suitable for situations with dissimilar items, where bidders would find it useful to be able to bid on sets of items” (45/30-46/2). The specification continues

“The fully-dynamic auction design may be thought of as a multi-unit generalization of the English auction for a single object. By the English auction, I mean the traditional method of auction used by auction houses such as Sotheby’s and Christie’s, where users successfully raise each other’s bids, until no new bids are entered. Clearly such an auction method can be implemented on the inventive system. However, the English auction faces the severe limitation that bids are one-dimensional, and so the method can only be used for the auction of a single parcel at a time. In order to auction multiple parcels in an English auction, it is necessary to auction the parcels in sequence, one after another. If the parcels are related, sequential auctioning is inefficient, as the prices of the last items may be out of line with the prices of the first items, and it becomes difficult for bidders to assemble the desired packages of items. This is particularly an issue when there exists synergies between the various items being auctioned: for example, in the case of related telecommunications licenses, or contiguous parcels of land.” (46/9-21)

In other words, there is a significant advantage in being able to auction sets of objects or items, as is the case in the rejected claims. There is nothing in the reference, or in the reasoning in the final rejection, to justify the rejection of these claims on this prior art.

For this reason, in addition to the arguments made with respect to the parent claims, Appellant submits that the rejection of claims 54, 61, 75, 83 and 86 be reversed.

Claim 65 depends from claim 61 and adds the recitation that the auction is conducted in multiple rounds. There is nothing in the sole reference, or in the Final rejection, to reach the subject matter. Appellant submits that this claim is patentable in addition to the reasons given with respect to its parent claim 61.

As to Claim 66

Claim 66 depends from claim 65. Thus, claim 66 is patentable for all reasons given with respect to claim 65. In addition, claim 66 specifies that the determining step is based on a

comparison of “the sum of the parameters P_i from the selected bids and a function of the sum of the parameters P_i of an earlier round of selected bids”.

This subject matter is neither discussed in the reference nor in the Office Action. Appellant submits, therefore, that claim 66 patentably distinguishes from the prior art, and requests that the rejection be reversed.

SUMMARY

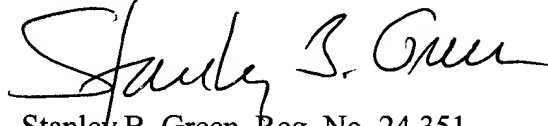
Claims 53, 57, 60 and 64 call for “decision means” or a step of “determining” whether to terminate an auction in response to “bid information”. None of the three modes of the reference (standard auction, dutch auction and markdown) determine whether to terminate an auction based on bid information, as claimed. Consequently the reference neither discloses nor suggests subject matter as claimed.

Claims 67, 71, 74, 78, 81, 82, 84 and 85 include method and apparatus claims. The method claims call for a “computer implemented” auction or the use of a computer to implement an auction and a step of determining the licenses or other derivative rights to be assigned to bidders. The reference has no disclosure of any determining and no disclosure, hint or suggestion that a computer be involved in the auction. The apparatus claims call for “means for determining” the television licenses or associated derivative rights to be assigned to bidders. This 112/6th paragraph clause is supported by the flow diagrams of figures 8 and 9. The reference has no such disclosure. There is no disclosure in the reference of even the use of a computer for any such determination. The reference is simply too general on which to base a rejection of these claims.

Claims 54, 61, 65, 75, 83 and 86 specify that the bid information includes identification for “sets” of licenses. While the reference describes auctions for sequentially selling objects or items, it fails to describe an auction where a bid may be directed at a set of objects or items. There is a significant difference between these subjects as described in the specification at page 46, lines 9-21. For this additional reason appellant submits these claims patentably define over the reference.

In view of the foregoing, Appellant requests reversal of each and every rejection of the claims in the Application.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Stanley B. Green". The signature is fluid and cursive, with the first name "Stanley" being more prominent.

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APPENDIX

CLAIMS

53. A computer implemented auction system for television licenses or associated derivative rights comprising

a) an auctioneer's system and at least two user systems, the auctioneer's system communicatively coupled to user systems;

b) said user systems including:

means for receiving messages from the auctioneer's system and for displaying those messages;

means for receiving bid related information from users, said information including bids for television licenses or associated derivative rights; and

means for transmitting bid information to the auctioneer's system; and

c) said auctioneer's system including:

means for generating and transmitting messages to user systems, said messages including a non-final message indicating that an auction will continue and a final message indicating that an auction has terminated;

means for receiving bid information from user systems; and

decision means responsive to the bid information received from the user systems for determining whether an auction should continue or terminate, said decision

means including:

c31) means to initiate the generation of a non-final message to at least one user system in response to a determination to continue an auction; and

c32) means to initiate the generation of a final message to at least one user system in response to a determination to terminate an auction.

54. A system as recited in claim 53 wherein the bid information includes a value parameter P_i and an associated license subset identification S_i , where the license subset identification S_i identifies a set of licenses and where the value parameter P_i specifies a payment proposed by the user in return for the licenses of subset S_i .

55. A system as recited in claim 54 wherein the decision means includes a selecting means to select an n-tuple of bids (S_i, P_i) , at most one from each user system, which selection is effective to optimize the

sum of the different value parameters P_i of the selected bids subject to the constraint that the associated subsets S_i of all of the selected bids are compatible.

56. A system as recited in claim 54 wherein the decision means selects bids to optimize the sum of the different value parameters P_i of the selected bids subject to the constraint that the associated subsets S_i of every pair of selected bids are disjoint.

57. A system as recited in claim 53 wherein the auction is conducted in multiple rounds.

58. A system as recited in claim 56 wherein the auction is conducted in multiple rounds.

59. A system as recited in claim 58 wherein the decision means compares the sum of the parameters P_i from the selected bids to a function of the sum of the parameters P_i of an earlier round of selected bids.

60. A method for conducting a computer implemented auction of television licenses or associated derivative rights to a plurality of users comprising

- a) providing an auctioneer's system;
- b) receiving bid related information from users, said information including bids for television licenses or associated derivative rights, and transmitting bid information to the auctioneer's system;
- c) determining at the auctioneer's system, in response to the bid information received from users, whether the auction should continue or terminate;
- d) transmitting a message indicating that the auction will continue to at least one user, in response to a determination to continue the auction; and
- e) transmitting a message indicating that the auction will terminate to at least one user, in response to a determination to terminate the auction.

61. A method as recited in claim 60 wherein the bid information includes a value parameter P_i and an associated license subset identification S_i , where the license subset identification S_i identifies a set of licenses and where the value parameter P_i specifies a payment proposed by the user in return for the licenses of subset S_i .

62. A method as recited in claim 61 wherein the determining includes selecting an n-tuple of bids (S_i, P_i) , at most one from each user system, which selection is effective to optimize the sum of the different

value parameters P_i , of the selected bids subject to the constraint that the associated subsets S_i , of all of the selected bids are compatible.

63. A method as recited in claim 61 wherein the determining selects bids to optimize the sum of the different value parameters P_i , of the selected bids subject to the constraint that the associated subsets S_i of every pair of selected bids are disjoint.

64. A method as recited in claim 60 wherein the auction is conducted in multiple rounds.

65. A method as recited in claim 61 wherein the auction is conducted in multiple rounds.

66. A method as recited in claim 65 wherein the determining compares the sum of the parameters P_i from the selected bids to a function of the sum of the parameters P_i , of an earlier round of selected bids.

67. A system for conducting a computer implemented auction of television licenses or associated derivative rights, said system including a plurality of user systems operated by bidders and an auctioneer's system, the auctioneer's system being communicatively coupled to a plurality of user systems, comprising

- a) means for receiving bid information for the television licenses or associated derivative rights from bidders at a plurality of user systems,
- b) means for transmitting signals based on the bid information from user systems to the auctioneer's system, and
- c) means for determining, based on the signals, the television licenses or associated derivative rights to be assigned to the bidders.

68. A system as recited in claim 67 wherein the bid information includes a value parameter P_i , and an associated license subset identification S_i , where the license subset identification S_i identifies a set of licenses and where the value parameter P_i specifies a payment proposed by the user in return for the licenses of subset S_i .

69. A system as recited in claim 68 wherein the decision means includes a selecting means to select an n-tuple of bids (S_i, P_i) , at most one from each user system, which selection is effective to optimize the sum of the different value parameters P_i of the selected bids subject to the constraint that the associated subsets S_i of all of the selected bids are compatible.

70. A system as recited in claim 68 wherein the decision means selects bids to optimize the sum of the different value parameters P_i of the selected bids subject to the constraint that the associated subsets S_i , of every pair of selected bids are disjoint.

71. A system as recited in claim 67 wherein the auction is conducted in multiple rounds.

72. A system as recited in claim 70 wherein the auction is conducted in multiple rounds.

73. A system as recited in claim 72 wherein the decision means compares the sum of the parameters P_i , from the selected bids to a function of the sum of the parameters P_i , of an earlier round of selected bids.

74. A method for conducting a computer implemented auction of television licenses or associated derivative rights in a system including a plurality of user systems operated by bidders and an auctioneer's system, the auctioneer's system being communicatively coupled to a plurality of user systems, the method comprising:

- a) receiving bid information for the television licenses or associated derivative rights from bidders at a plurality of user systems,
- b) transmitting signals based on the bid information from user systems to the auctioneer's system, and
- c) determining, based on the signals, the television licenses or associated derivative rights to be assigned to the bidders.

75. A method as recited in claim 74 wherein the bid information includes a value parameter P_i , and an associated license subset identification S_i where the license subset identification S_i identifies a set of licenses and where the value parameter P_i specifies a payment proposed by the user in return for the licenses of subset S_i .

76. A method as recited in claim 75 wherein the determining includes selecting an n-tuple of bids (S_i, P_i) , at most one from each user system, which selection is effective to optimize the sum of the different value parameters P_i of the selected bids subject to the constraint that the associated subsets S_i , of all of the selected bids are compatible.

77. A method as recited in claim 75 wherein the determining selects bids to optimize the sum of the different value parameters P_i , of the selected bids subject to the constraint that the associated subsets S_i , of every pair of selected bids are disjoint.

78. A method as recited in claim 74 wherein the auction is conducted in multiple rounds.

79. A method as recited in claim 77 wherein the auction is conducted in multiple rounds.

80. A method as recited in claim 79 wherein the determining compares the sum of the parameters P_i , from the selected bids to a function of the sum of the parameters P_i , of an earlier round of selected bids.

81. A computer system for implementing an auction of television licenses or associated derivative rights, said auction including a plurality of bidders, comprising:

- a) means for inputting, into the computer, bids for television licenses or associated derivative rights;
- b) means for determining, based on the bids, an allocation of television licenses or associated derivative rights to bidders; and
- c) means for outputting, from the computer, the allocation of television licenses or associated derivative rights to bidders.

82. A system as recited in claim 81 wherein the auction is conducted in multiple rounds.

83. A system as recited in claim 81 wherein the bids include a value parameter P_i , and an associated license subset identification S_i , where the license subset identification S_i identifies a set of licenses and where the value parameter P_i specifies a payment proposed by the user in return for the licenses of subset S_i .

84. A method for using a computer to implement an auction of television licenses or associated derivative rights, said auction including a plurality of bidders, comprising:

- a) inputting, into the computer, bids for television licenses or associated derivative rights;
- b) determining, based on the bids, an allocation of television licenses or associated derivative rights to bidders; and
- c) outputting, from the computer, the allocation of television licenses or associated derivative rights to bidders.

85. A method as recited in claim 84 wherein the auction is conducted in multiple rounds.

86. A method as recited in claim 84 wherein the bids include a value parameter P_i and an associated license subset identification S_i , where the license subset identification S_i identifies a set of licenses and where the value parameter P_i specifies a payment proposed by the user in return for the licenses of subset S_i .